

PATENT

Attorney Docket 020174C-001810US  
118C.210USATTENTION: Examiner A. Chakrabarti  
FACSIMILE NO.: 703-872-9307

Group Art Unit 1634

**OFFICIAL**

## CERTIFICATE OF TRANSMISSION UNDER 37 CFR § 1.8

I hereby certify that the following documents in re Application of STEPHEN R. QUAKE et al., Serial No. 09/707,737 filed November 6, 2000 for METHODS AND APPARATUS FOR ANALYZING POLYNUCLEOTIDE SEQUENCES are being facsimile transmitted to the United States Patent and Trademark Office on the date shown below.

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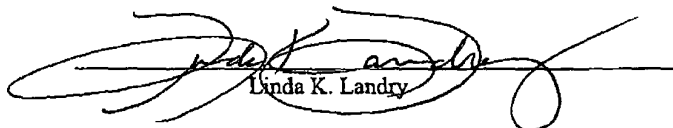
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**GROUP 1600**Document(s) Attached

1. Transmittal Form
2. Fee Transmittal for FY 2002
3. Petition for Extension of Time Under 37 CFR 1.136(a)
4. Request for Continued Examination (RCE) Transmittal
5. Request for Continued Examination Under 35 USC. § 114, Response Under 35 USC §111

Number of pages being transmitted, including this page: eight (8)

Dated: 13 March 2003

  
Linda K. Landry

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PTO/SB/21 (08-00)

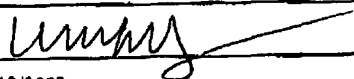
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<b>TRANSMITTAL FORM</b>  <i>(to be used for all correspondence after initial filing)</i>	Application Number	09/707,737
	Filing Date	11/06/2000
	First Named Inventor	Quake
	Group Art Unit	1634
	Examiner Name	A. Chakrabarti
Total Number of Pages in This Submission		Attorney Docket Number 20174C-001810US

ENCLOSURES <i>(check all that apply)</i>		
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Reply <input checked="" type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input checked="" type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks <b>REQUEST FOR CONTINUED EXAMINATION INCLUDED</b>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	William M. Smith Reg. No. 30,223
Signature	
Date	03/13/2003

CERTIFICATE OF MAILING	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231 on this date: _____	
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Signature	_____
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**FEE TRANSMITTAL  
for FY 2002**

Patent fees are subject to annual revision.

**TOTAL AMOUNT OF PAYMENT** (\$)**1,100.00****Complete If Known**

Application Number	09/707,737
Filing Date	11/06/2000
First Named Inventor	Quake
Examiner Name	A. Chakrabarti
Group Art Unit	1634
Attorney Docket No.	20174C-001810US

**METHOD OF PAYMENT**

- 1.
- ☒
- The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number	502508
Deposit Account Name	Fluidigm Corporation

- ☒ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17
- ☒ Applicant claims small entity status. See 37 CFR 1.27

- 2.
- ☐
- Payment Enclosed:
- 
- ☐
- Check
- ☐
- Credit card
- ☐
- Money Order
- ☐
- Other

**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
101 740	201 370	Utility filing fee	
106 330	206 165	Design filing fee	
107 610	207 255	Plant filing fee	
108 740	208 370	Reissue filing fee	
114 180	214 80	Provisional filing fee	

**SUBTOTAL (1)** (\$)**0.00****2. EXTRA CLAIM FEES**

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	-20** = 0	X	\$0
Multiple Dependent	-3** = 0	X	\$0

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
103 18	203 9	Claims in excess of 20
102 84	202 42	Independent claims in excess of 3
104 280	204 140	Multiple dependent claim, if not paid
109 84	209 42	** Reissue independent claims over original patent
110 18	210 9	** Reissue claims in excess of 20 and over original patent

**SUBTOTAL (2)** (\$)**0.00**

\*\*or number previously paid, if greater; For Reissues, see above

**FEE CALCULATION (continued)****3. ADDITIONAL FEES**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
105 130	205 65	Surcharge - late filing fee or oath	
127 50	227 25	Surcharge - late provisional filing fee or cover sheet	
139 130	139 130	Non-English specification	
147 2,520	147 2,520	For filing a request for ex parte reexamination	
112 920*	112 920*	Requesting publication of SIR prior to Examiner action	
113 1,840*	113 1,840*	Requesting publication of SIR after Examiner action	
116 110	215 55	Extension for reply within first month	
118 400	216 200	Extension for reply within second month	
117 920	217 480	Extension for reply within third month	
119 1,440	218 720	Extension for reply within fourth month	\$725.00
128 1,880	228 900	Extension for reply within fifth month	
119 320	219 160	Notice of Appeal	
120 320	220 160	Filing a brief in support of an appeal	
121 280	221 140	Request for oral hearing	
138 1,510	138 1,510	Petition to institute a public use proceeding	
140 110	240 55	Petition to revive - unavoidable	
141 1,280	241 640	Petition to revive - unintentional	
142 1,280	242 640	Utility issue fee (or reissue)	
143 480	243 230	Design issue fee	
144 620	244 310	Plant issue fee	
122 130	122 130	Petitions to the Commissioner	
123 50	123 50	Processing fee under 37 CFR 1.17(q)	
126 180	126 180	Submission of Information Disclosure Stmt	
581 40	581 40	Recording each patent assignment per property (times number of properties)	
146 740	246 370	Filing a submission after final rejection (37 CFR § 1.129(a))	
148 740	248 370	For each additional invention to be examined (37 CFR § 1.129(b))	\$375.00
179 740	279 370	Request for Continued Examination (RCE)	
169 800	169 800	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

**SUBTOTAL (3)** (\$)**1,100.00****SUBMITTED BY**Name (Print/Type) **William M. Smith**Registration No. **30,226**

(Attorney/Agent)

**Complete if applicable**Telephone **650 266 6050**

Signature

Date **03/13/2003****WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

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PTO/SB/30 (08-00)

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# **REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL**

Subsection (b) of 35 U.S.C. § 132, effective on May 29, 2000,  
provides for continued examination of an utility or plant application  
filed on or after June 8, 1995.  
See The American Inventors Protection Act of 1999 (AIPA).

Application Number	09/707,737
Filing Date	11/06/2000
First Named Inventor	Quake
Group Art Unit	1634
Examiner Name	A. Chakrabarti
Attorney Docket Number	20174C-001810US

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application.

**NOTE:** 37 C.F.R. § 1.114 is effective on May 29, 2000. If the above-identified application was filed prior to May 29, 2000, applicant may wish to consider filing a continued prosecution application (CPA) under 37 C.F.R. § 1.63 (d) (PTO/SB/29) instead of a RCE to be eligible for the patent term adjustment provisions of the AIPA. See Changes to Application Examination and Provisional Application Practice, Final Rule, 65 Fed. Reg. 50092 (Aug. 15, 2000); Interim Rule, 65 Fed. Reg. 14866 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office 47 (Apr. 11, 2000), which established RCE practice.

## **1. Submission required under 37 C.F.R. § 1.114**

- a. ☐ Previously submitted
- i. ☐ Consider the amendment(s)/reply under 37 C.F.R. § 1.118 previously filed on \_\_\_\_\_  
(Any unentered amendment(s) referred to above will be entered).
- ii. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_
- iii. ☐ Other \_\_\_\_\_
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- ii. ☐ Affidavit(s)/Declaration(s)
- iii. ☐ Information Disclosure Statement (IDS)
- iv. ☐ Other \_\_\_\_\_

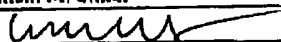
## **2. Miscellaneous**

- a. ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of \_\_\_\_\_ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.17(f) required)
- b. ☐ Other \_\_\_\_\_

## **3. Fees** The RCE fee under 37 C.F.R. § 1.17(e) is required by 37 C.F.R. § 1.114 when the RCE is filed.

- a. ☒ The Director is hereby authorized to charge the following fees, or credit any overpayments, to Deposit Account No. 502,508
- i. ☒ RCE fee required under 37 C.F.R. § 1.17(e)
- ii. ☒ Extension of time fee (37 C.F.R. §§ 1.136 and 1.17)
- iii. ☐ Other \_\_\_\_\_
- b. ☐ Check in the amount of \$\_\_\_\_\_ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)

## **SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**

Name (Print/Type)	William M. Smith	Registration No. (Attorney/Agent)	30,223
Signature		Date	03/13/2003

## **CERTIFICATE OF MAILING OR TRANSMISSION**

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PATENT

ATTORNEY DOCKET 020174-00181US  
118C.210US  
Application Serial No. 09/707,737

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s) Quake, et al.

Art Unit: 1634

Appl. No.: 09/707,737

Examiner: A. CHAKRABARTI

Filed: Nov. 6, 2000

Title:  
METHODS AND APPARATUS FOR  
ANALYZING POLYNUCLEOTIDE  
SEQUENCES

REQUEST FOR CONTINUED  
EXAMINATION UNDER 35 U.S.C. §114

RESPONSE UNDER 35 U.S.C. §111

Assistant Commissioner for Patents  
Washington, D.C. 2023

Sir,

In response to the Office Action mailed October 1, 2002, Applicants provide this Request for Continued Examination and Response. Reconsideration of the application mentioned above is respectfully requested.

## REQUEST FOR CONTINUED EXAMINATION

Applicants hereby request continued examination of the above-captioned application under 35 U.S.C. §114. A response under 35 U.S.C. §111 is supplied herewith.

## RESPONSE

This reply is made in response to an Advisory Action mailed October 1, 2002, such Action being provoked by Applicants timely response filed on September 13, 2002 to a Final Office Action mailed July 3, 2002. Applicants have carefully considered the Examiner's Advisory Action and provide this response. Reconsideration of the present application is respectfully requested.

PATENT

ATTORNEY DOCKET 020174-00181US  
118C.210US  
Application Serial No. 09/707,737

The Examiner maintains several rejections under 35 U.S.C. §103, stating the claimed invention is not patentable over Livak, *et al.*, (US 5,945,284), in view of Effenhauser, *et al.*, Analytical Chemistry (1997) 69:3451-3457, and in further view of Craighead (US 6,214,246 B1), along with other different references. Applicants respectfully traverse these rejections for the following, additional reasons.

Applicants have addressed the Livak-Effenhauser-Craighead containing combinations in prior responses. In addition to those arguments, Applicants politely point out that the Examiner's reliance upon Craighead to impart in the Examiner's combination the currently recited claim limitation of "multilayer elastomeric" is misguided and improper. Nowhere in Craighead is an elastomeric material disclosed or suggested. Indeed, Craighead teaches away from using an elastomeric material to make its fluidic devices because the pillars of Craighead would collapse if made of elastomeric material due to their high-aspect ratio shape. Craighead only discloses or suggests rigid materials such as glass, quartz, silicon, or plastic materials. Craighead further discloses the reason for using rigid materials by forming an artificial gel within the reaction chamber by providing erect, high-aspect ratio pillars formed from such rigid materials.

Structures . . . have been produced in silicon dioxide, silicon, germanium, polymers, and metals. In one example, pillars were etched 400 nm deep into silicon by Cl<sub>2</sub> reactive ion etch, with the pillar size and separation being approximately 100 nm. The size, shape, and spacing of these pillars, when used as an artificial gel material, affects the DNA motion in the sequencing of DNA fragments. Craighead, Column 10, lines 30-37

Moreover, Craighead emphasizes that the "a substrate carries a plurality of upstanding pillars arranged in linear, or channelized, arrays on, and extending upwardly from, the surface of [the] substrate . . . ." (column 10, lines 36-38). The artificial gel is then formed by the interaction between the liquid introduced into the chamber and the erect, high-aspect ratio pillars.

[E]ach of the sample channels . . . contain a highly porous medium for sample separation in electrophoretic analysis. This porous medium functions as an artificial gel for the sample, and is

PATENT

ATTORNEY DOCKET 020174-00181US  
118C.210US  
Application Serial No. 09/707,737

comprised of parallel pillars, such as the pillars illustrated in Fig. 7, which extend the full depth of the sample channels. Craighead, Column 9, lines 12-18.

Forming the pillars from an elastomeric material would not produce the "upstanding" pillars of Craighead, but rather, bent-over or collapsed pillars. Thus, Craighead, by its need for "upstanding" pillars, impliedly teaches away from using an elastomeric material because using an elastomeric material would defeat the purpose of the pillars and thus render the Craighead device inoperable for the use disclosed by Craighead. It is well settled that a reference cannot be used in a combination that would defeat the purpose of that reference, and/or where such a reference teaches away from making the claimed invention. Accordingly, Applicants respectfully request withdrawal of these rejections because Craighead cannot be reasonably said to teach or suggest using an elastomer.

#### CONCLUSION

Applicants believe the claim is now in condition for allowance for the foregoing reasons. Accordingly, Applicants respectfully request a Notice of Allowance. If, in the Examiner's opinion, a telephone conference may be helpful, Applicants' counsel may be contacted at the number below.

Very truly yours,



William M. Smith  
Reg. No. 30,223

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